Scenario DBD

Scenario 1

Medical History provided to Retrieval Teams

47 year old DBD

Died after subarachnoid haemorrhage. Pronounced brain stem dead.

History of Asthma as child and previous appendicectomy.

No current medications.

Allergy to penicillin.

CT confirms diagnosis.

Organs placed; heart, lungs, liver, 2 kidneys. Pancreas declined by all centres.

Theatre Preparation

Anaesthetic machine and monitoring providing appropriate simulated physiological variables.

Surgical instrument trays made up with retired instruments from abdominal and cardiac teams

Equipment for organ preservation and transport (2 kidney boxes, 1 liver box, pancreas box, heart box and a dual lung box); 1 litre bags of saline to simulate cold preservation fluids

Crushed ice (20 kilos)

Documentation and labelling as appropriate to a multi-organ retrieval.

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Organ Donor

Organ donor mannequin, comprising a head, neck, thorax, abdomen and pelvis, the latter of which were open as a thoracolaparotomy (midline incision to expose chest and abdomen).

The chest and abdominal compartments were complemented with an organ block, prepared the same day in an abattoir by an abattoir technician working under the direction of a consultant transplant surgeon. There was a fresh organ block for each simulation.

The organ block comprised the trachea, lungs, heart, liver, pancreas and kidneys, all attached to the aorta (arch to the aortic bifurcation).

Donor Operation - DBD

A pre-operative brief was held in the operating theatre as is routine in organ retrieval. The purpose is to introduce staff to each other, to discuss the conduct of the procedure, and to identify the individuals performing the various roles.

As is customary in DBD organ retrieval, the Specialist Nurse in Organ Donation (SNOD) then left to bring the simulated donor to theatre, once the team were satisfied that all preparations were in place. The simulated donor, complete with organ block, had been placed outside the operating theatre in preparation.

On arrival, donor I.D. was checked, and the SNOD confirmed this with the surgical team.

The surgical team then scrubbed for surgery, and the donor was skin-prepped and draped as usual.

The midline thoracolaparotomy incision was previously taped over. This incision was then opened by the lead abdominal surgeon who then dissected out the various abdominal organs so that only simple dissection would be required after cold preservation. The cardiothoracic surgeon used a Gigli saw to simulate opening the chest. The lead cardiothoracic surgeon made similar preparations in the chest once a suitable interval was identified by the abdominal surgeon. In the simulated situation, the warm phase dissection took approximately an hour, instead of 3 hours, given that the organs were not physically attached to the body wall in the simulated donor.

Blood samples were simulated as would be required for lung assessment in lung retrieval.

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At an appropriate juncture, the lead abdominal surgeon placed a cannula in the abdominal aorta, and the cardiothoracic surgeon placed a cannula in the ascending aorta. These were connected to simulated preservation solutions. After surgical communication, the donor was 'cross-clamped', when the cold preservation solution was flushed into the vessels in abdominal and cardiothoracic organs. Crushed ice with saline was placed in the abdomen and chest.

The anaesthetic machine then indicated an alarm state, with cardiac arrest alarms and desaturation alarms at full volume, along with suitably abnormal monitor traces.

After suitable cold flushing, the organs were finally separated from arterial and venous structures, and removed from the donor and placed in ice on a back-table. The organs were then bagged and boxed ready for transport.

Once the procedure had been completed, including simulated drivers being handed the organ boxes with all paperwork, the simulation was closed.